Alpha Release

Historic Places and Events:
Pretty wall, pretty fast!

Luin

big asteloid, tiny you

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Current State

A lot has changed since the Interim Report, yet the basic structure of the game was maintained. The most time intensive and important change was the inclusion of the XEN-Graphics-Library, which provides us with a ingenious GPU-based particle system, easy to use Normal-Mapping and efficient drawing methods. Thus enabling us to focus more on game design and less on tedious implementation of basic technologies.

Further we have made Progress in all areas, which shall be discussed in more detail now:

XEN integration

While trying to implement more advanced rendering techniques we stumbled upon a free API for XNA, called XEN, that already implements all the functionality we'll ever need, so we decided to give it a try. We spent quite a bit of time adapting the project to work with this library, but in the end we succeeded and it's now successfully integrated.

XEN tweaking

The fact of having it integrated in the code doesn't mean it is working as intended :D It took some time to re-learn how to display geometry on screen using proper texturing and illumination.

Model polishing and normal maps

Some models needed to be slightly modified after the integration of XEN, while others had errors that got fixed. In addition, since now normal mapping is working, we created normal mapping textures for most of the geometry in the game.

Player textures

Quick work, we introduced colored textures for each of the player sphere (whose texture was also updated) and their normal maps.

Lvl
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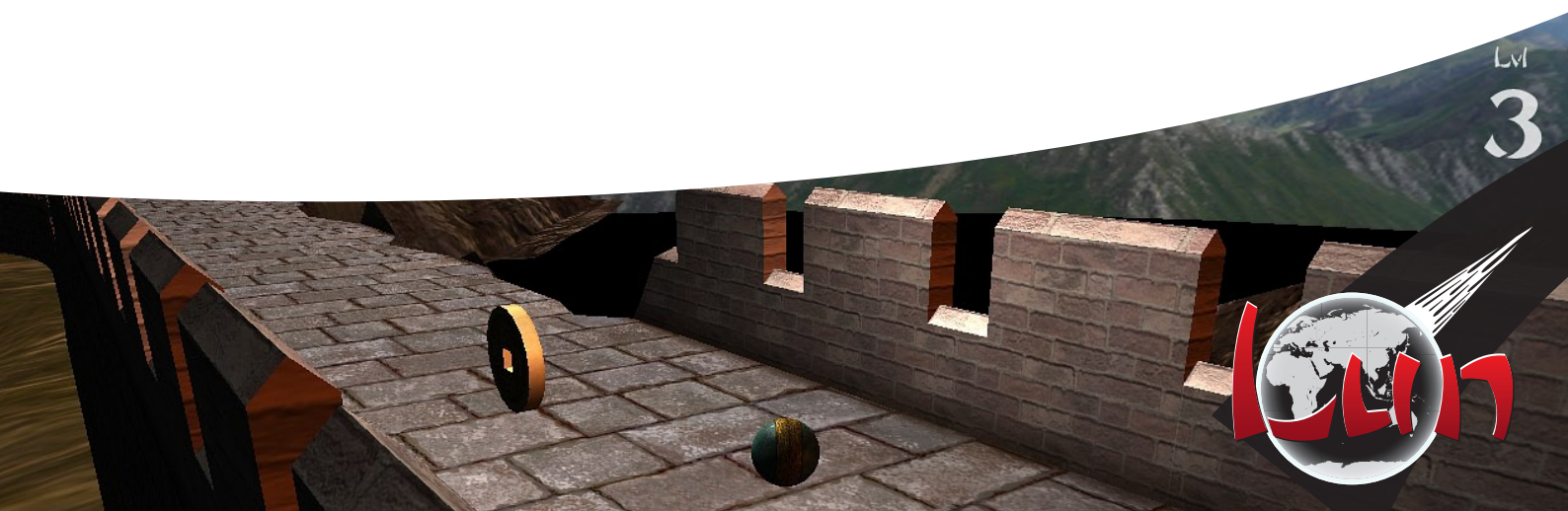
Lights

XEN provides a simple lighting system which we happily incorporated. Thus having 2 directional light sources (the sun and the doom), a point light per player and a little bit of ambient light.

Transforming the Terrain to the XEN drawing and shading methods turned out to be more tedious than expected. But in the end we finally found the trick and can proudly present our procedural terrain with full lighting and normal mapping. The terrain generation has been overhauled so the pieces connect seamless to the wall and eachother.

Visual Feedback

To make the use of coins more intuitive we added a huge amount of visual feedback which is triggered by modifiers. For example „minidoom" now bursts red pixels and „teleport" turns your playing sphere into a bunch of sparks, which will come together again at another point further away from the doom.

Most of these effects are done with the help of Xen's particles system we are using. It provides a very nice XML abstraction layer of the GPU commands where building new particle effects is a breeze.

We also added a lot of visual effects which helps you to understand what is happing in the game. First there are some glowing particles in the air, then ash, then smoke and if you're not out of the near doom area by then, doom has you.

Auditorial Feedback

To increase the effect of visual feedback we also added a specific sound effect to each coin, so you hear springs if you „jump" and an accelerating tune if you trigger „speed". Now you can hear „monsterball" growing.

To really put a stress moment on the doom, we also added some rumbling sounds to it. This sound is getting louder and louder, the nearer the doom is, so you should keep on hurry. Your life is depending on it!

Second thing we did on audio effects, is a new collection of different kinds of music. Now you as a player have the possibility to chose what you hear!

Up to now we really have problems to handle the media player. It never does what we want it to do. And we are just not able to change the volume in which songs are played.

Third visual help to understand what is happening is that if a coin is triggered, the players get informed about it. So if I do get the inverse steering, now I have a visual signal on the screen that I should be careful when steering. It also shows how much longer the coin is activated. Obviously we also have a few coins which do not need any visual input, e.g. "jump".

Haptic Feedback
Now we also trigger the vibrating effects of the gamepad. The doom shakes the earth, but also collecting sound and driving into the wall is not ideal for you as a player.

More track pieces
Of course, more variety in the track pieces means more fun! Sadly, it takes quite some time to model bot the graphical view and the bounding volumes, but we are confident that we will have a decent number of them in the end.

Obstacles
We added meteors and stones as obstacle which lay on the wall and have to be surrounded. The meteors even do have fire on them, which again is one of the already mentioned particle effects.

Meteors
Parts of the Meteor obviously have split on entering the amtosphere. Now they bother you impacting all around you now and then as small meteor splinters.

HUD

The HUD has been completely overhauled. It displays all the information you need at a glance. Position of the Doom, and your enemies, how far you lan, velocity, points, current coin, active coins and even how long you lived.

Help

It's not all that easy - that's why we added a help page that - well - helps.

New Game Mode - Ride the Doom

Simple: Stay near the doom, to get points. As you burst into flames it's quite easy to see, when you're near enough - or if you die too near.

Code debugging and optimization

A lot of time has been spent in hunting down memory leaks. We try to avoid almost all in game allocations and keep the allocations we need to do as simple as possible. Garbage collector related issues are thus history.
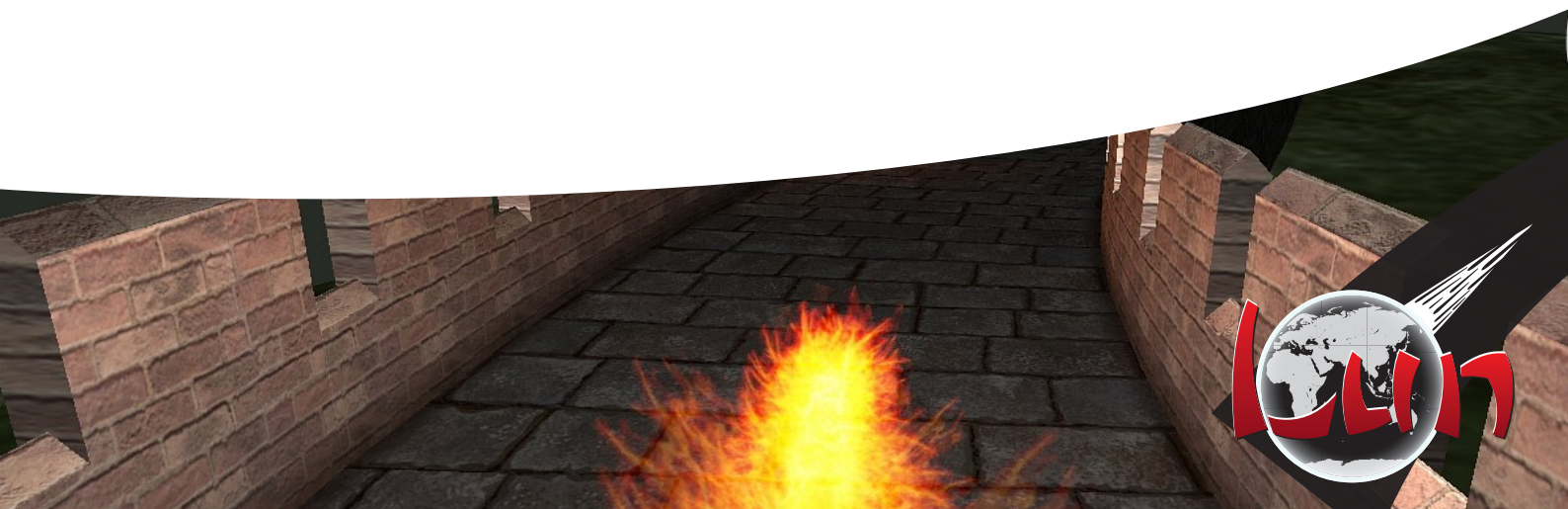
Performance

Performance is still a large issue at hand. Frame rates drop below an acceptable level in 3 and 4 player mode due to the immense amount of things to draw. We will have to spend some time in hunting down performance hogs to get the game to a playable performance in 4 player mode. Computationally expensive tasks like terrain creation and track expansion have been moved to a background thread. Several tasks update with less than 60 Hz, as it is not needed. Again Xen provides a simple to use interface for updating.
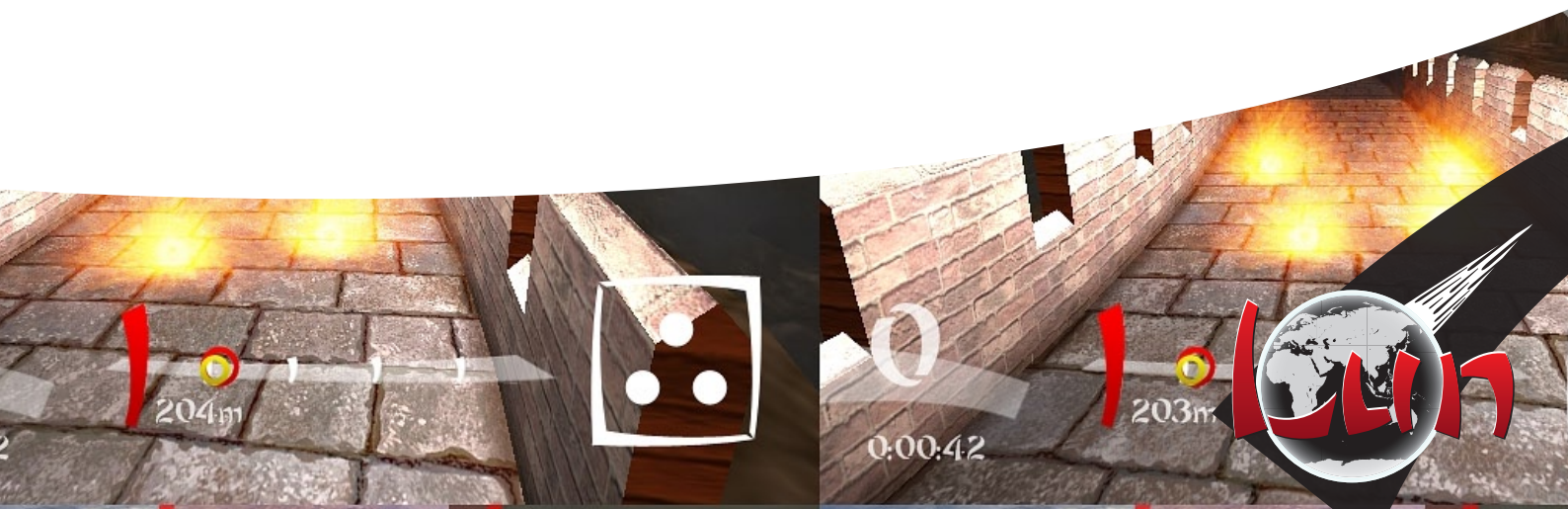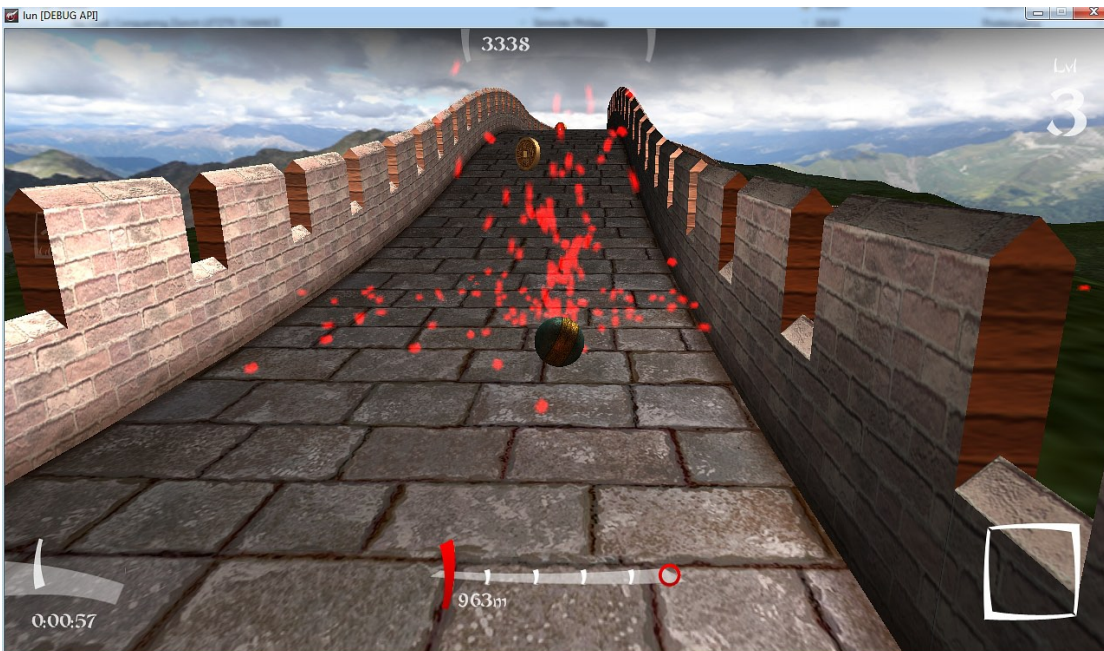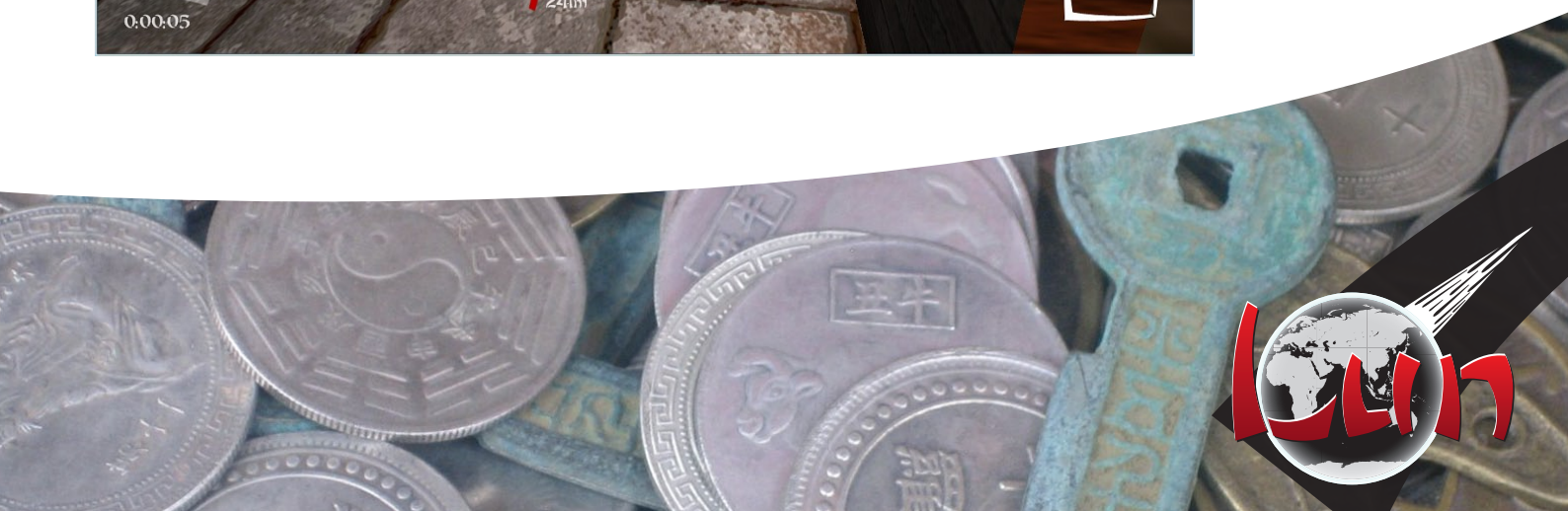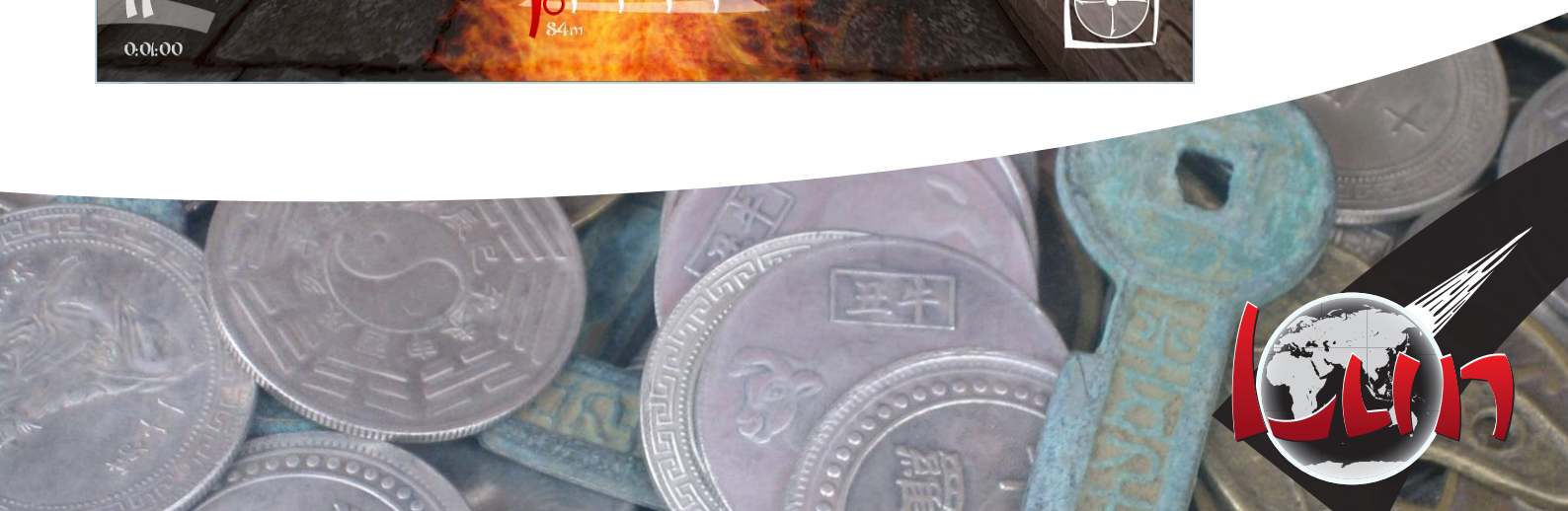
Visual Impressions

Almost dead
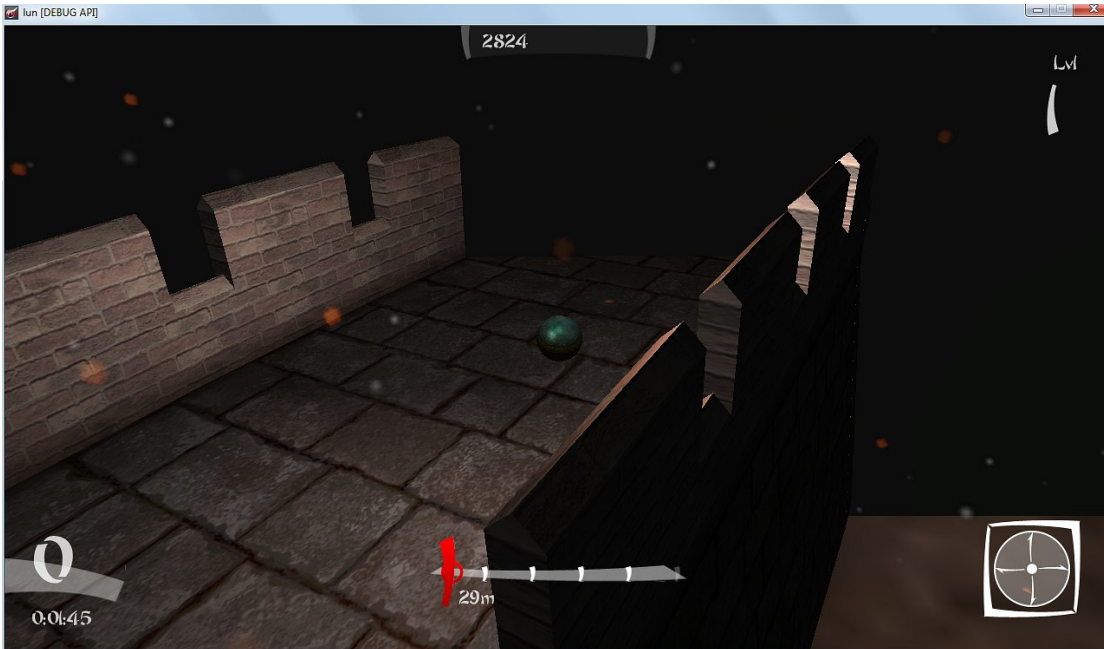
Mini Doom
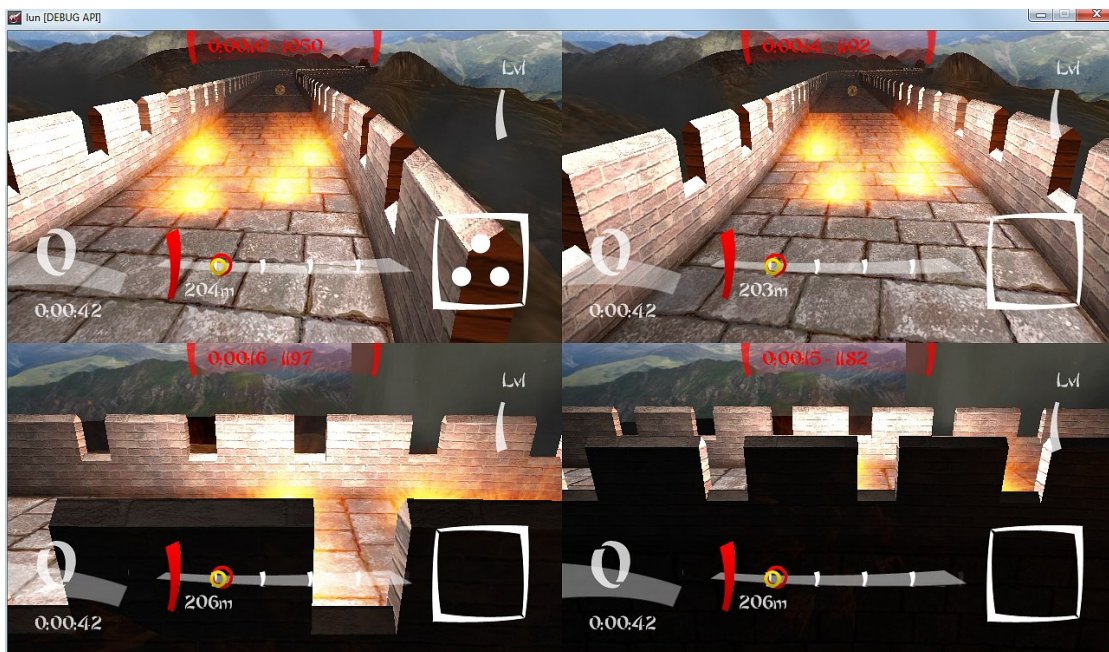
Stones

Meteors
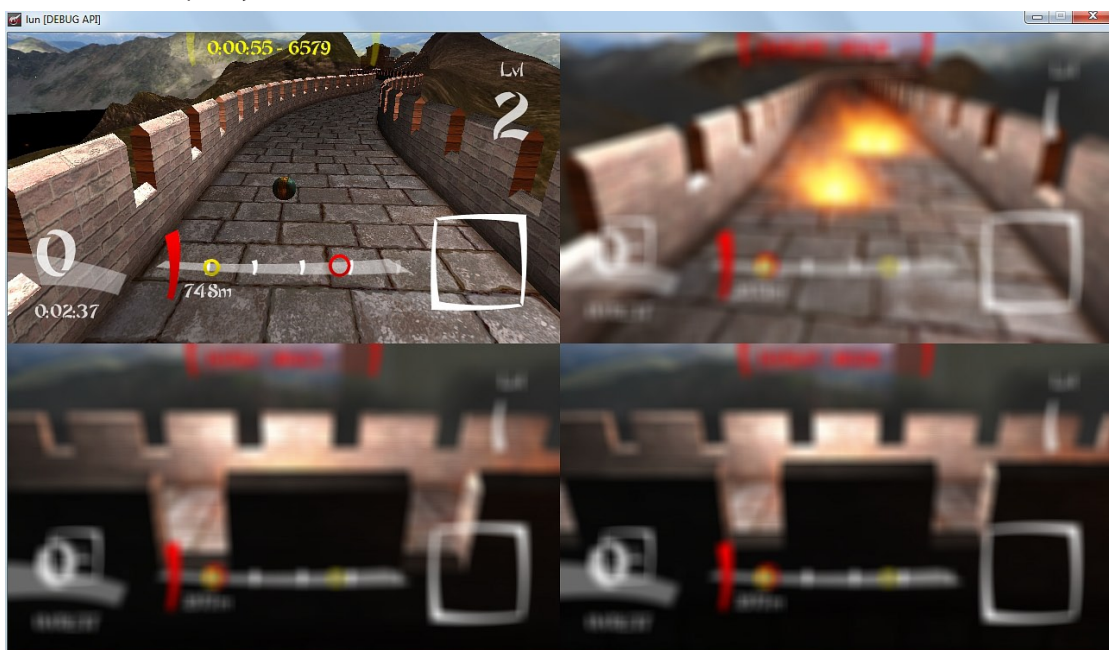
New wall piece - broken.

Ride the doom!

Ride the Doom - 4 players

Drunk - 4 players

Targets

Most tasks in desirable targets have been completed. Missing at this point is a proper intro sequence introducing to the storyline, but we'll have it ready for the final presentation. Same holds for predefined destructible wall pieces.

Several tasks from the original task list have been removed: There will be no burning trees as it's not feasible performance wise. Also we postponed heat distortion for the same reason.

The game being complex enough already we decided to remove everything that increases the complexity further: Thus there will be no damage to the sphere and also no character development with unlockable features. The main use of it would've been to improve the Singleplayer long term motivation. But as we focus more on the multiplayer fun, we chose to abandon the idea.

Outlook

We will hold an extensive testing session in StuZ2 at Thursday 13.5. afternoon, hoping to get a lot of insight on what to improve.

Apart from that, there are several remainig issues and cleanups we have on our task list like the still weak 4-player performance, stats screen, intro, destructible wall pieces and a lot of small visual, auditorial and haptical feedback improvements to increase the ease of use.

Tasklist updated

	Functional Minimum	Low Target	Desirable Target	High Target	Extra
Gameplay	- Run over Wall - Jump over Holes - Approaching Doom	- Complex Track - Multiplayer (2) - Simple Powerups - Visible Doom - "Lunscreen"	- Complex Powerups - Destructible Track (predefined) - Complex Doom with Near-Death FX - ~~Damage~~ - ~~Character Development (Speed, Control, Acceleration, Jump)~~ - Intro Sequenz - Save Progress/Highscore - Multiplayer (4)	- Dynamic Fractures - Visualize Damage - Global Ranklist - Post to Facebook - Different Shapes of Characters - Credits - Pause Game	- 3D Mode - AI-Enemy - Different Settings/Places - Story Mode - Human charactera
Playmodes	- Lun!	- Lun togheter	- As far as possible - Ride the doom	- Coin Collecter	
Graphics	- Basic Wall - Player (Sphere)	- Simple Shaders (BM,..) - Particle FX (Smoke, Fire)	- Complex Shaders - on thBlur - ~~Heat Distortion~~ - Powerups change Player/Environment - Floating Stuff in the air (e.g. Ash Particles)	- HDR-Glow - Bloom - Lensflare	
Physics	- none	- ~~Friction for Player "Sliding"~~ - Physics Engine	- ~~Different Ground Structures~~ - Simple Obstacles	- Destructible Wall/Player - Debris Collision	
Environment	- Basic Backgroundsphere	- Fitting Backgroundimage - ~~Parallaxscrolling~~ - Generated Terrain	- ~~Changing Background (Trees on fire)~~		
Sound	- none	- Backgroundmusic - Simple FX	- Matching Effects	- Select different Styles - Progressive Sound	- Surround
Powerups	- none	Completely Rescheduled: - Blind - Monster Ball - Inverse Steering - Inverse Look	- Jump - Mirror - Strobe - Teleport - Mini Doom		

Done   Newly Scheduled and done   In Progress ~~Removed~~

	Functional Minimum	Low Target	Desirable Target	High Target	Extra
Options	- none	- Single/Multiplayer - Volume	- Playmodes - Difficultywe - Help	- Customize Controller	
Achievements	- none	- none	- yes	- more!	- awesome.
Menu	- start	- functional	- animated	- awesome.	
HUD	- Distance Run (Numbers) - Distance to Doom - Runtime	- Graphs - Powerupstack	- Fixed to Player - Animated Stack		- Customize
Multiplayer	- none	- The farer you get	- Interaction through Powerups	- Same Track	- Online Multiplayer
Leveling	- none	- none	- Simple Basic Features	- Unlock "weapons"	
Misc	- none	- none	- none	- Contract with Blackrock or Disney ;)	- Contract with Blackrock AND Disney :)